

D2 45. (new) An analog of human erythropoietin comprising the amino acid sequence of human erythropoietin from residues 1-165 as shown in SEQ ID NO:1 except for one or more amino acid changes which provide for one or more additional glycosylation site(s) as compared to human erythropoietin, wherein one additional site is introduced at about position 52, 53, 55, 86 or 114 and an N-linked carbohydrate chain is attached at said one additional site.

46. (new) An analog of human erythropoietin comprising the amino acid sequence of human erythropoietin from residues 1-165 as shown in SEQ ID NO:1 except for one or more amino acid changes which provide for one or more additional glycosylation site(s) as compared to human erythropoietin, wherein one additional site is introduced at position 52, 53, 55, 86 or 114 and an N-linked carbohydrate chain is attached at said one additional site.

Sub E1 47. (new) The analog of Claim 46 comprising additional glycosylation sites at positions 30, 55, 88 and 114 and wherein an N-linked carbohydrate chain is attached at each of said additional sites.

48. (new) The analog of Claim 46 comprising an additional glycosylation site at position 125 and wherein an O-linked carbohydrate chain is attached at the additional site.

49. (new) An analog of human erythropoietin comprising the amino acid sequence from residues 1-165 as shown in SEQ ID NO:1 except for Asn at position 30, Thr at position 32, Asn at position 55, Thr at position 57, Val at position 87, Asn at position 88, Thr at position 90, Asn at position 114, Thr at position 116, and any one or more of Pro at position 124, Thr at position 125 and Thr at position 126.

50. (new) An analog of human erythropoietin comprising the amino acid sequence from residues 1-165 as shown in SEQ ID NO:1 except for the amino acid changes selected from the group consisting of:

Asn⁵² Thr⁵⁴ Epo;

Asn⁵³ Thr⁵⁵ Epo;

Asn³⁰ Thr³² Val⁸⁷ Asn⁸⁸ Thr⁹⁰ Thr¹²⁵ Epo;

Asn¹¹⁴ Thr¹¹⁶ Epo;

Asn³⁰ Thr³² Asn⁵³ Thr⁵⁵ Val⁸⁷ Asn⁸⁸ Thr⁹⁰ Epo;

Asn⁵⁵ Thr⁵⁷ Epo;

Asn⁸⁶ Val⁸⁷ Thr⁸⁸ Epo;
 Ala⁸⁷ Asn⁸⁸ Thr⁹⁰ Epo;
 Val⁸⁷ Asn⁸⁸ Ser⁹⁰ Epo;
 Val⁸⁷ Asn⁸⁸ Gly⁸⁹ Thr⁹⁰ Epo;
 Asn³⁰ Thr³² Asn⁵³ Thr⁵⁵ Epo;
 Asn³⁰ Thr³² Asn¹¹⁴ Thr¹¹⁶ Epo;
 Asn³⁰ Thr³² Asn⁵³ Thr⁵⁵ Val⁸⁷ Asn⁸⁸ Thr⁹⁰ Asn¹¹⁴ Thr¹¹⁶ Epo;
 Asn³⁰ Thr³² Asn⁵⁵ Thr⁵⁷ Epo;
 Asn³⁰ Thr³² Asn⁵⁵ Thr⁵⁷ Val⁸⁷ Asn⁸⁸ Thr⁹⁰ Epo;
 Asn³⁰ Thr³² Asn⁵⁵ Thr⁵⁷ Asn¹¹⁴ Thr¹¹⁶ Epo;
 Asn³⁰ Thr³² Val⁸⁷ Asn⁸⁸ Thr⁹⁰ Asn¹¹⁴ Thr¹¹⁶ Epo;
 Asn³⁰ Thr³² Asn⁵⁵ Thr⁵⁷ Val⁸⁷ Asn⁸⁸ Thr⁹⁰ Asn¹¹⁴ Thr¹¹⁶ Epo;
 Asn³⁰ Thr³² Asn⁵⁵ Thr⁵⁷ Val⁸⁷ Asn⁸⁸ Thr⁹⁰ Pro¹²⁴ Thr¹²⁵ Thr¹²⁶ Epo;
 Asn³⁰ Thr³² Asn⁵⁵ Thr⁵⁷ Asn¹¹⁴ Thr¹¹⁶ Pro¹²⁴ Thr¹²⁵ Thr¹²⁶ Epo; and
 Asn³⁰ Thr³² Asn⁵⁵ Thr⁵⁷ Val⁸⁷ Asn⁸⁸ Thr⁹⁰ Asn¹¹⁴ Thr¹¹⁶ Pro¹²⁴ Thr¹²⁵ Thr¹²⁶ Epo;

51. (new) The analog of Claims 45, 46, 47, 48, 49 or 50 which is the product of expression of an exogenous DNA sequence.

52. (new) A composition comprising a therapeutically effective amount of an analog of Claims 45, 46, 47, 48, 49, or 50 and a pharmaceutically acceptable diluent, carrier, solubilizer, emulsifier, preservative, anti-oxidant and/or adjuvant.

53. (new) The composition of Claim 52 wherein the diluent is Tris, citrate, acetate or phosphate buffer.

54. (new) The composition of Claim 52 wherein the carrier is human albumin or gelatin.

55. (new) The composition of Claim 52 wherein the solubilizer is tween or polysorbate.

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56. (new) The composition of Claim 52 wherein the preservative is thimerosal, parabens, benzylalconium chloride or benzyl alcohol.

57. (new) The composition of Claim 52 wherein the antioxidant is ascorbic acid or sodium metabisulfite.

58. (new) The composition of Claim 52 further comprising an amino acid.

59. (new) The composition of Claim 58 wherein the amino acid is lysine or glycine.

60. (new) The composition of Claim 52 which is in liquid or lyophilized form.
